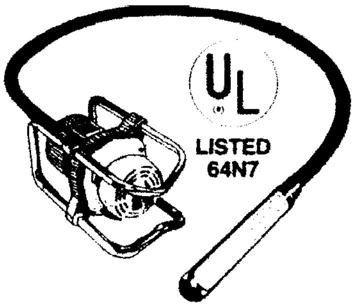
WYCO®

ELECTRIC SQUARE HEAD CONCRETE VIBRATORS

SERVICE MANUAL

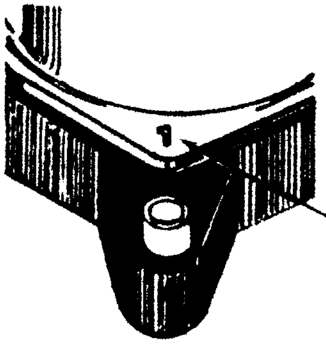
MODELS

DOUBLE INSULATED: 902A, 903, 902A-230, 903-230
GROUNDED: 992A, 993, 992A-230, 993-230



PARTS LIST

REF. NO.	DESCRIPTION	NO. REQ.	115 VOLT				230 VOLT			
			902A	992A	903	993	902A-230	992A-230	903-230	993-230
1	END CAP	1	415335	415335	415335	415335	415335	415335	415335	415335
2	PLASTIC BOLT	4	415308	415308	415308	415308	415308	415308	415308	415308
3	CORD CLAMP	1	415324	415324	415324	415324	415324	415324	415324	415324
4	BRACKET-CORD CLAMP	1	415326	415326	415326	415326	415326	415326	415326	415326
5	LOCK NUT 8-32	2	415512	415512	415512	415512	415512	415512	415512	415512
6	STUD-MOTOR HOUSING	4	415309	415309	415309	415309	415309	415309	415309	415309
7	CORD SET	1	415328	415389	415328	415389	415422	415424	415422	415424
8	GROMMET	1	415330	415330	415330	415330	415330	415330	415330	415330
9	SCREW—PAN HD #8 x 3/8	4	415359	415359	415359	415359	415359	415359	415359	415359
10	LOCK WASHER #8	4	415360	415360	415360	415360	415360	415360	415360	415360
11	BRUSH HOLDER CLAMP	2	415322	415322	415322	415322	415322	415322	415322	415322
12	FILTER	1	415554	415554	415554	415554	415554	415554	415554	415554
13	SWITCH	1	415361	415361	415361	415361	415361	415361	415361	415361
14	LOADING SPRING	1	415333	415333	415333	415333	415333	415333	415333	415333
15	BALL BEARING	2	099909	099909	099909	099909	099909	099909	099909	099909
16	BRUSH RETAINER	2	415323	415323	415323	415323	415323	415323	415323	415323
17	BRUSH HOLDER	2	415515	415515	415515	415515	415515	415515	415515	415515
18	BRUSH	2	415525	415525	415525	415525	415230	415230	415230	415230
19	HEX NUT #10-32	2	415363	415363	415363	415363	415363	415363	415363	415363
20	FIELD	1	415211	415211	415511	415511	415221	415221	415521	415521
21	ARMATURE W/BEARINGS	1	415209	415209	415509	415509	415219	415219	415539	415539
22	LOCK WASHER #10	2	415362	415362	415362	415362	415362	415362	415362	415362
23	SCREW #10-32 x 3-1/2	2	—	—	415358	415358	—	—	415358	415358
23	SCREW #10-32 x 3	2	415212	415212	—	—	415212	415212	—	—
24	FIELD SLEEVE	1	765210	765210	765510	765510	765210	765210	765510	765510
25	GROUNDING INSERT	1	—	175512	—	175512	—	175512	—	175512
26	BOLT-SELF THD 1/4 x 1	4	435510	435510	435510	435510	435510	435510	435510	435510
27	FRAME TUBE (INNER)	2	415528	415528	415528	415528	415528	415528	415528	415528
28	FRAME TUBE (OUTER)	2	415529	415529	415529	415529	415529	415529	415529	415529
29	FRAME TUBE SUPPORT	1	415315	415315	415315	415315	415315	415315	415315	415315
30	POP RIVET	4	415311	415311	415311	415311	415311	415311	415311	415311
31	BUSHING	4	415310	415310	415310	415310	415310	415310	415310	415310
32	SCREW - TYPE "U" #2	4	415303	415303	415303	415303	415303	415303	415303	415303
34	HEX DRIVER	1	415518	415518	415518	415518	415518	415518	415518	415518
35	MOTOR HOUSING (OUTER)	1	415526	415526	415526	415526	415526	415526	415526	415526
36	MOTOR HOUSING (INNER)	1	415519	415519	415519	415519	415519	415519	415519	415519
37	MOTOR CONNECTOR	1	465513	465513	465513	465513	465513	465513	465513	465513



FOR IDENTIFICATION IN CASE NAME PLATE HAS BEEN REMOVED, THE FOLLOWING CODE HAS BEEN STAMPED ON DIE CAST HOUSING ㉟

ORDER ONLY IDENTICAL REPLACEMENT PARTS. BE SURE TO INCLUDE PART NUMBER, DESCRIPTION AND QUANTITY.

Model		115V	230V
902A/992A	—	2A	2V
903/993	—	3	3V

SERVICE INSTRUCTIONS

This unit has been designed to operate for a minimum of 50 hours between normal shop "preventative maintenance". Should it become necessary to replace brushes, (brush worn to a length of less than 1/4 inch), switch or cord, the following "service instructions" should be followed. Tools required to perform all service requirements: blade point screw driver and wrenches or socket screw drivers for the following size bolts and nuts — 11/32, 3/8 and 7/16 hex. NOTE: Use only identical replacement parts when performing the following:

1. TO REPLACE BRUSHES ⑱

TO REMOVE:

A. Disconnect line cord ⑦ from power source.

B. Set motor in upright position (switch ⑬ up).

C. Remove four 3/8 Hex bolts ② . Lift off cover ① .

D. Loosen 1/4 turn the No. 8-32 slotted pan head machine screw ⑨ holding the brush retainer ⑯ .

E. Brush spring will eject. Carefully remove the brush ⑱ .

F. Repeat for the opposite side.

TO REPLACE:

G. Align new brush ⑱ as shown (see opposite page) with brush holder ⑰ and insert. **Note:** Avoid chipping edges of brush when inserting.

H. Feed spring into brush holder ⑰ hold spring in place and reposition brush retainer ⑯ . Hold in place.

J. Hold brush retainer ⑯ firmly in position against brush holder ⑰ while screw ⑨ is tightened.

K. Repeat for opposite side.

L. Replace cover ① .

M. Replace four 3/8 hex bolts ② . **Note:** Do not over tighten bolts!

2. TO REPLACE SWITCH ⑬

TO REMOVE:

A. Disconnect line cord ⑦ from power source.

B. Set motor in upright position (switch ⑬ up).

C. Remove four 3/8 hex bolts ② lift off cover ① .

D. Remove rubber sleeve ⑫ from switch. **Note:** Vertical slot in threaded barrel of switch ⑬ is toward cord ⑦ .

E. Remove four screws ㉘ from switch ⑬ .

F. Remove switch ⑬ .

TO REPLACE:

G. Position new switch ⑬ on mounting pins on motor housing ㉚ . **Note:** Vertical slot in threaded barrel of switch ⑬ must be toward cord ⑦ this is necessry in order to have "on off" of switch agree with marking on cover ① .

H. Position each of the four wire terminals to the respective positions on the switch ⑬ .

J. Replace four screws ㉘ tighten screws firmly.

K. Replace rubber sleeve ⑫ over threaded barrel of switch ⑬ .

L. Replace cover ① .

M. Replace four 3/8 hex bolts ② . **Note:** Do not over tighten bolts!

3. TO REPLACE POWER CORD ⑦

TO REMOVE:

A. Disconnect line cord ⑦ from power source.

B. Set motor in upright position (switch ⑬ up).

C. Remove four 3/8 hex bolts ② . Lift off cover ① .

D. Remove two screws ㉘ from cord ⑦ side of switch ⑬ .

E. Alternately loosen two No. 8-32 hex nuts ⑤ until flush with top of cord clamp bracket ④ . **Note:** Do not remove nuts ⑤ from bracket ④ .

F. Withdraw cord ⑦ thru open cord clamp ③ .

G. Remove rubber grommet ⑧ from old cord ⑦ . Note approximate position.

TO REPLACE:

H. Position rubber grommet ⑧ on new cord ⑦ in proper position to fit into grooves in motor housing ㉚ .

J. Insert new cord ⑦ thru open cord clamp.

K. Position cord ⑦ so the screw terminals on cord leads are aligned with screw ㉘ holes in switch ⑬ . Position Green Lead (Grounding) as shown.

L. Assemble two screws ㉘ thru screw terminals on cord leads ⑦ and tighten securely. **Note:** Cord leads are to be in position as shown.

M. Hold switch ⑬ firmly in position on positioning lugs on motor housing ㉚ and draw back cord ⑦ thru open cord clamp bracket ④ and place rubber grommet ⑧ and cord ⑦ in proper position.

N. Holding cord ⑦ and grommet ⑧ in position by pressing cord clamp bracket ④ against cord ⑦ alternately tighten two No. 8-32 hex nuts ⑤ until switch ⑬ , cord ⑦ and cord clamp ③ are tight. **Note:** Be sure cord clamp ③ is clamping firm on outer jacket of cord ⑦ and not on the two wire leads.

O. Replace cover ① .

P. Replace four 3/8 hex bolts ② . **Note:** Do not over tighten bolts!

4. TO REPLACE FIELD ⑱ AND ARMATURE ㉑

TO REMOVE:

A. Disconnect line cord ⑦ from power source.

B. Set motor in upright position (switch ⑬ up).

C. Remove four 3/8 Hex bolts ② . Lift off cover ① .

D. Remove four No. 8-32 slotted pan head machine screws and washers ⑨ ⑩ from brush clamps ⑪ and field leads.

E. Remove brush retainers ⑯ brushes and springs ⑱ and brush holders ⑰ .

F. Remove two No. 6-32 slotted binder head screws ㉘ from switch ⑬ . Note: Only remove screws ㉘ from blue, yellow or black field ⑳ leads.

G. Remove four 7/16 hex motor housing studs ⑥ from inner motor housing ㉚ .

H. Grasp inner motor housing ㉚ in one hand and rotate back and forth while pulling away from die cast motor housing ㊳ and lift off. (Note: armature should stay positioned in the die cast motor housing ㊳ and loading spring should be put aside for later reassembly.) Now remove armature from die cast motor housing ㊳ .

J. With open end of inner motor housing ㉚ up remove two slotted fillister head machine screws ㉓ that secure field ⑳ and field sleeve ㉔ in inner motor housing ㉚ . Do not loose nuts ⑲ on opposite side of housing ㉔ as they will drop out of their position in housing ㉚ when screws ㉓ are removed.

K. Lift field sleeve ㉔ and field ⑳ out of inner motor housing ㉚ guiding field lead terminals through holes in motor housing ㉚ .

TO REPLACE:

NOTE: Before inserting new field ⑳ into motor housing ㉚ press insulation away from screw holes on side with field leads to be sure that insulation does not interfere with mounting of field ⑳ in housing ㉔ .

M. Install new field ⑳ in motor housing ㉚ with four lead wires entering first. Field ⑳ to be in position to permit the two colored leads to enter directly into the two clearance holes in motor housing ㉚ position all lead wires in their approximate position as shown.

N. Align holes in field ⑳ with holes in housing ㉚ . Now install field sleeve ㉔ and align holes. Next insert two screws ㉓ with lock washers ㉒ into field sleeve ㉔ .

O. Put nuts ⑲ in position in housing ㉚ and tighten screws ㉓ .

P. With open end of inner motor housing ㉚ and field sleeve assemble in the up position carefully install loading spring ⑭ into bearing bore.

Q. With housing ㉚ in replace die cast motor ㊱ casting (Note: armature has already been positioned in the die cast motor ㊱ housing. Also the motor coupling ㉚ should be installed on armature) and rotate until screw holes are aligned.

R. Install four motor housing studs ⑥ and tighten alternately.

S. With motor unit positioned with switch up, install brush holders ⑰ . Note: Each brush holder has a slot on one flat side, this slot is to be facing up and centered on the screw holes at each side of the brush holder slot. Press brush holder ⑰ down firmly in slot.

T. Position brush clamps ⑪ (clamps to fit in slot in brush holder ⑰) and brush retainers ⑯ over screw holes in motor housing ㉚ . Install screws ⑨ and lock washers ⑩ to brush retainer side of brush clamps ⑪ . Do not tighten.

U. Position field leads as shown ⑳ to other side of brush clamps ⑯ and install screws ⑨ and lock washers ⑩ tighten securely.

V. Insert brushes and springs ⑱ into brush holders ⑰ and swing brush ⑯ retainers into position to retain spring inside brush holder ⑰ . Tighten securely.

W. Position switch leads ⑬ and install two No. 6-32 slotted head binder head screws ㉘ in switch ⑬ . Tighten securely.

X. Replace cover ① . Note: Replace filter ⑫ if dirty.

Y. Replace four 3/8 hex bolts ② . Note: Do not over tighten bolts ② .

5. TO REPLACE FRAME TUBES

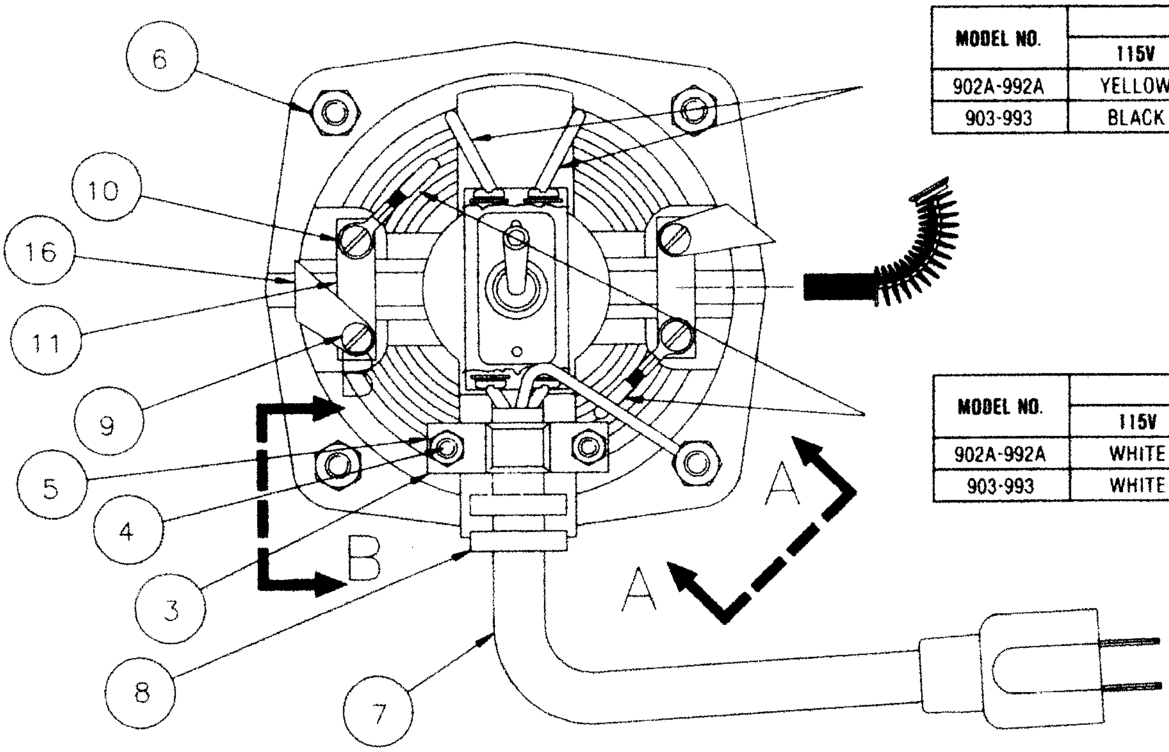
TO REMOVE:

The "Pop" Rivet ㉜ can be removed only by drilling through the head of the rivet. Removing the head permits pushing the body of the rivet through the hole. A 7/32 diameter drill or larger will remove the head. Caution should be exercised that you drill only deep enough to remove the head of the rivet. With rivet ㉜ pushed into handles ㉙ ㊲ withdraw frame tube ㉙ from frame tube ㊲ . Then remove frame tube ㊲ from frame tube support ㉛ .

TO REPLACE:

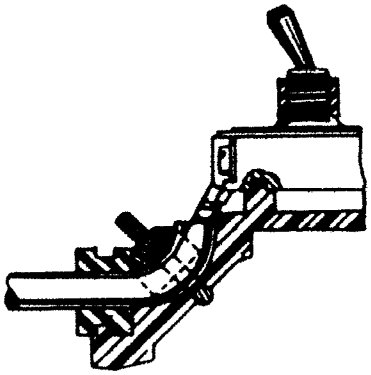
Insert new frame tube ㊲ into frame support ㉛ . Then insert frame tube ㉙ into frame tube ㊲ . Position frame tubes ㉙ and ㊲ so that all holes are aligned. Be sure that bushing ㉝ is in position shown before riveting. NOTE: Be sure to assemble with continuous loop.

ELECTRIC CONCRETE VIBRATORS ASSEMBLY DRAWINGS

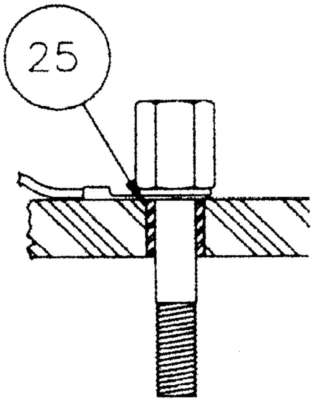


MODEL NO.	COLOR	
	115V	230V
902A-992A	YELLOW	YELLOW
903-993	BLACK	BLACK

MODEL NO.	COLOR	
	115V	230V
902A-992A	WHITE	RED
903-993	WHITE	RED

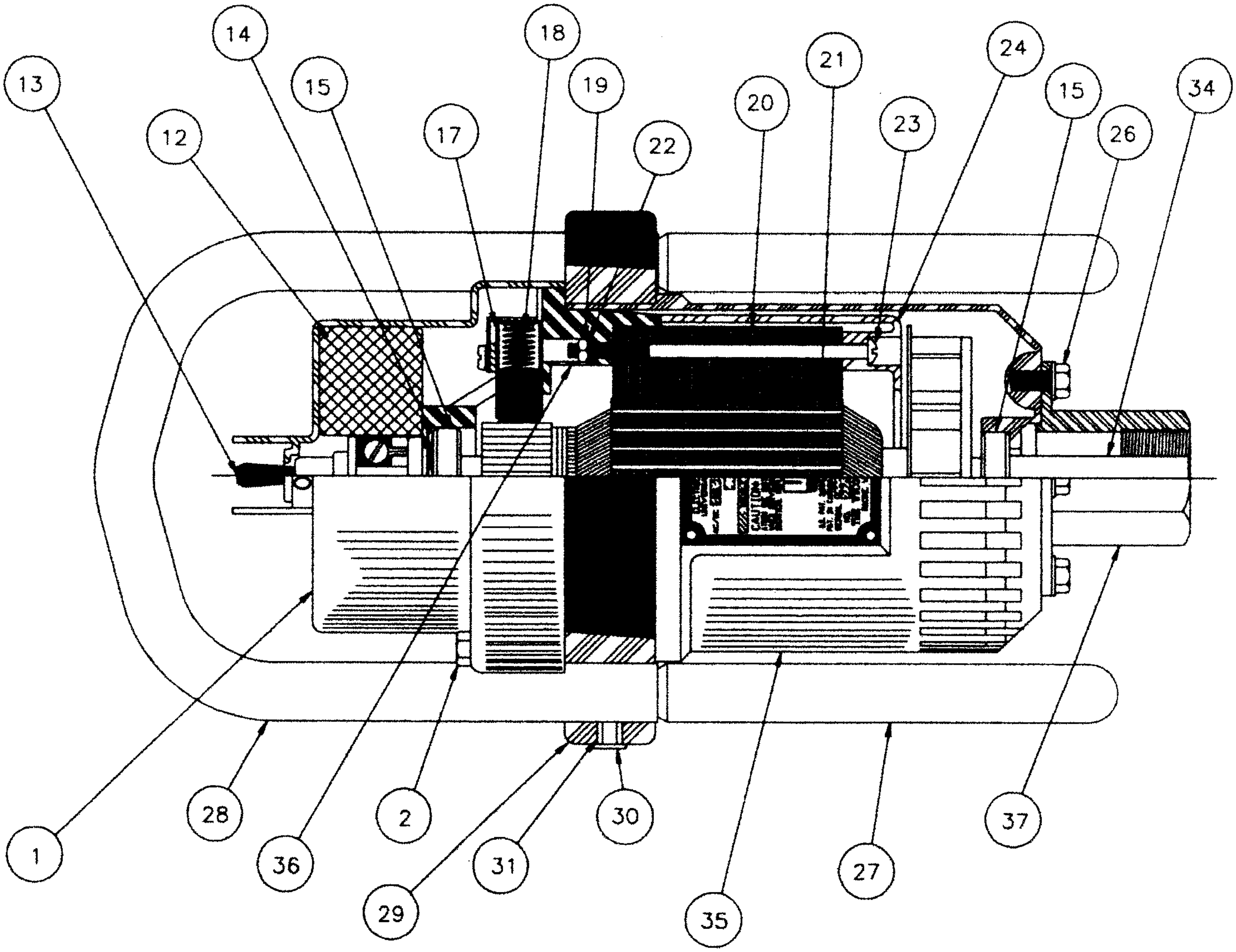


VISTA B = B



VISTA A = A

ELECTRIC CONCRETE VIBRATORS ASSEMBLY DRAWINGS



SERVICE AND MAINTENANCE INSTRUCTIONS FOR WYCO VIBRATOR HEADS

IMPORTANT: IF HEAD IS TO BE ALSO USED WITH BACKPACK GAS UNIT, REFER TO THAT SERVICE MANUAL.

SERVICE THE VIBRATOR HEAD AFTER EVERY 50 HOURS OF OPERATION TO INSURE TROUBLE-FREE RUNNING ON THE JOB.

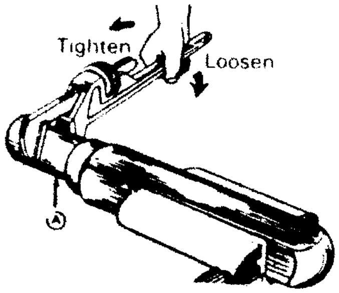
Tools: Chain Wrenches, Hexagon Wrenches, and Locking Pliers are very useful tools for servicing vibrators.

When servicing automatically replace Hex Driver ⑥, Seals ⑧, and Bearings ④.

Vibrator Heads – 1-3/8" and larger – have Timken Double Row taper Roller Bearings at each end of the eccentric rotor. The 7/8" and 1-1/16" diameter heads have double Ball Bearings.

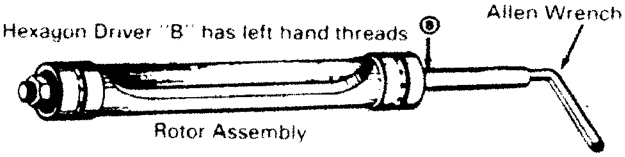
All Heads are equipped with a special seal at the flexible shaft end. All Heads contain oil—the seals serve a double purpose—to keep the oil in the head and the grease from the flexible shaft out of the head.

1. Before attempting to unscrew the end cap of a Vibrator Head, lay the head on a vise or heavy plate and tap the head with a hammer at the parting line, at point "A." This will help to break the seal and to loosen the threads.
2. Hold the nose end in a vise and unscrew end cap (counter-clockwise) with a chain wrench or a good pipe wrench. Use penetrating oil if cap does not unscrew readily.



3. Pull eccentric rotor assembly out of housing. (If bearings are stuck and you have difficulty removing them from the housing, screw end cap partly back into housing and bounce the head, cap down on a block of wood, in order to loosen bearings in their seat, then pull out the rotor assembly.)

NOTE Hexagon Driver "B" has left hand threads Ⓑ



4. Flush clean rotor assembly and housing with solvent and wipe all parts clean. Examine bearings, seals and hex driver. Replace all parts. Maintain concentric alignmnet of hex driver with respect to rotor shaft. Refill with proper amount of Wyco No. 514-O non-foaming vibrator oil. See chart.

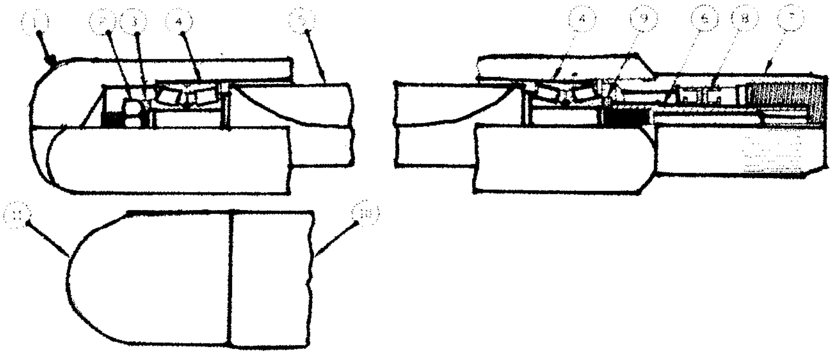
HEAD OIL REQUIREMENTS:

Head Size	Ounces Req'd.
3/4" sq.	1/2
1" sq.	3/4
1-3/8" sq.	1
1-3/4" sq.	1-1/4
2" sq.	2
2-1/4" sq.	3-1/2

5. Replace rotor assembly, screw end cap (A) about half way on the threads. Apply Loctite 242 adhesive/sealant (available on request) all around the seat of the end cap and housing threads. Tighten and remove excess gasket component. It is important that the end cap should fit tightly against the housing, in order to form a water-proof seal.

REPLACING OIL SEALS — *If inspection reveals that grease from the flexible shaft has penetrated into the head (the lube in the head will be a thick, heavy, sticky mixture), the oil seals need replacement. All seals are pressed into the end-cap. When replacing seals, mount them back to back (neoprene seal lips face away from each other). The purpose of the seals is to keep the oil of the head in, and the flexible shaft grease out. Always be careful not to damage the polished surface of the hex driver (B) where it runs in the seals. Replace the driver also at this time if it shows excessive wear.

DRAWING AND PARTS LIST FOR VIBRATOR HEADS



CATALOG NO.:			750-D	750-EH	750-FI	750-GI	750-LI	750-MI
Ref. No.	Description	Req'd.	7/8" Sq.	1-1/16" Sq.	1-3/8" Sq.	1-3/4" Sq.	2" Sq.	2-1/4" Sq.
1	HEAD HOUSING	1	58-7320	58-7325	58-7330	58-7335	58-7360	58-7365
2	HEX NUT	1	43-5638	43-2710	43-2708	43-2707	43-2707	43-2707
3	WASHER	1	–	–	88-7015	88-7011	88-7011	88-7011
4	BEARINGS (BALL)	4	09-7011	09-7012	–	–	–	–
4	BEARINGS (ROLLER)	2	–	–	09-7013	09-7010	09-7010	09-7020
5	ECCENTRIC ROTOR	1	71-7340	71-7345	71-7355	71-7335	71-7360	71-7365
6	HEX DRIVER	1	38-2428	38-4447	38-4446	38-4446	38-4446	38-4446
7	END CAP W/SEALS	1	–	20-7248	20-7233	20-7239	20-7263	20-7268
	BUSHING - NOT SHOWN	1	–	17-7325	–	–	–	–
8	OIL & GREASE SEAL	2	–	74-7545	74-7504	74-7504	74-7504	74-7567
8	OIL & GREASE SEAL ASSEMBLY	1	74-7540	–	–	–	–	–
9	WASHER	1	–	–	88-7015	88-7016	88-7016	88-7016
10	HEAD HOUSING W/RUBBER TIP	1	–	–	587331	587336	587361	587366
11	RUBBER TIP - NOT SHOWN		–	–	843100	843500	846000	846500

FLEXIBLE SHAFT - LUBRICATION

VIBRATORS — when shipped complete from the factory—have the shafts already lubricated. However—separate cores and casings are shipped without lubrication. Lubrication of the shaft is required after 50 hours of operation.

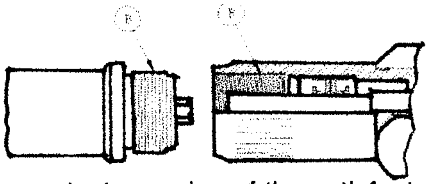
A good way to lubricate the core is to grasp some No. 514-B WYCO SHAFT LUBRICANT in the palm of the right hand and—grasping the core—run the closed hand with the lubricant over the length of the core—leaving on the core a light coating of the lubricant on the entire length of the core.

CAUTION: Do not "over-lubricate" as the surplus lubricant may get past the seal in the Vibrator Head.

When adding lubricant on the job—after each 50 hours of operation—loosen casing from motor and pull down over the core about 15" and 18". Apply lubricant as above to exposed section of core.

Reinstalling Casing—lubricant will travel full length of the casing by the operation of the shaft.

NOTE: When attaching Square Vibrator Heads to the Flexible Shaft casing—always use the Permatex Form-a-Gasket No. 2 on the threads.



One of the greatest enemies of the satisfactory performance of Vibrator heads is water. As the head is submerged in the mix—water and cement try to get into the head. In addition to tightening the head onto the flexible shaft as tightly as possible, (b) the threads must be coated with "Permatex Form-a-Gasket No. 2." This must be done each time the head is removed and re-installed.

The same holds good for the end cap threads. The Form-a-Gasket is used when head is assembled at the factory. Each time the head is taken apart the old cement should be removed and new applied.